CONTENTS OF VOLUME 174

(The second of three Congress Volumes)

Infrared-induced conformational isomerization and reverse reaction in the dark of 1,2-propanediol in low-temperature argon matrices
C. G. Park, M. Nakata and M. Tasumi (Tokyo, Japan) 1

Rhenium carbonyl and dinitrogen complexes: identification of intermediates by matrix isolation photochemistry and metal atom synthesis
W. E. Klotzbücher (Mülheim a.d. Ruhr, F.R.G.) 5

Raman studies on N_2/rare-gas mixed crystals
H. Däufer, W. Löwen and H. J. Jodl (Kaiserslautern, F.R.G.) 11

Spectroscopic investigations of matrix isolated adducts between metal vapors of chromium and benzene
M. Dalibart, J. Derouault, H. Labarrere and M. Tranquille (Talence, France) 17

Temperature dependent site structure of the phenalenyl radical in n-pentane and n-hexane Shpol'skii matrices
J. W. Hofstraat, A. J. Schenkeveld, C. Gooijer and N. H. Velthorst (Amsterdam, The Netherlands) 23

IR study of hydrogen bonds formed by π-complexes of transition metals in liquid xenon solution
B. V. Lokshin, S. G. Kazarian, A. G. Ginzburg (Moscow, U.S.S.R.) 29

Raman intensities and polarizability parameters (EOPs) of some oxo-anions of Group V, VI and VII elements in aqueous solution: general trends
H. H. Eysel, K. T. Lim and Ch. Oberle (Heidelberg, F.R.G.) 35

On the infrared absorption profiles of dilute solutions
P. Carlier and G. Turrell (Villeneuve, France) 41

Comparison of experimental and "ab initio" intensity parameters
M. Gussoni (Genova, Italy and Milano, Italy), M. N. Ramos (UFPE, Brasil and Milano, Italy), C. Castiglioni and G. Zerbi (Milano, Italy) 47

Surface enhanced Raman scattering on silver-coated tin spheres
R. Aroca (Windsor, Ont., Canada) and G. J. Kovacs (Mississauga, Ont., Canada) 53

Characterization of the 'Surface Enhanced Raman Scattering' by use of Raman-spectroscopic and quantum mechanical investigations of simple cluster compounds
P. Bleckmann, M. Thibud and H. D. Trippe (Dortmund, F.R.G.) 59

Theoretical investigation of adsorption of water dimers on a Ni(110) surface
M. Grodzicki and O. Kühnholz (Hamburg, F.R.G.) 65

In situ laser Raman spectroscopy of the sulphiding of $WO_3(MoO_3)/\gamma Al_2O_3$ catalysts
E. Payen (Lasir, C.N.R.S.), S. Kasztelan and J. Grimblot (Villeneuve, France) 71

Statics and dynamics of amorphous solids studied by photoburning of persistent spectral holes (PPSH)
J. Kikas, K. Haller and R. Jaaniso (Tartu, U.S.S.R.) 77

Structure and equilibria of purine in ethanol. An UV study
F. Acción, D. Escolar, J. Tortajada (Puerto Real, Spain) and T. J. Leo (Madrid,Spain) 83

Structure and dynamics of solid CCl_4 matrices doped with acetonitrile
H.-J. Deiseroth, S. Popp, H. Kollhoff, W. Langel and E. Knözinger (Siegen, F.R.G.) 89

Infrared band structures at the phase transition in sym-triazine
A. L. Roy, A. Rahhaoui and R. Guerin (Poitiers, France) 95

A comparison of methods for decomposing overlapping bands in Raman spectra
K. Palmö, B. Mannfors and L.-O. Pietilä (Helsinki, Finland) 101

Dynamics of metal carbonyls on the infrared time scale: coalescence of CO stretching vibrational bands
F.-W. Grevels, J. Jacke and K. Seevogel (Mülheim a.d. Ruhr, F.R.G.) 107

Time-resolved infrared spectroscopy of transient metal carbonyl species in the gas phase
Y. Ishikawa, P. A. Hackett and D. M. Rayner (Ottawa, Ont., Canada) 113

Uniaxial stress effects on the zero-phonon line emission of the O_2^- defect in calcium oxide
P. A. van Leeuwen and M. Glasbeek (Amsterdam, The Netherlands) 117

Amide resonance and FT-IR spectra of some β-lactam derivatives: application of resolution enhancement procedures in Fourier space
M. Gil, J. Plumet, N. Iza and J. Morcillo (Madrid, Spain) 123

Hydrogen bonding of N-monosubstituted amides. IR study of N-ethyl-acetamide and N-methylpropionamide
A. D. Nikolić, M. Tarjani, N. Perišić-Janjić (Novi Sad, Yugoslavia) and S. D. Petrović (Belgrade, Yugoslavia) 129

Photoionization of the outer- and inner-valence shells of PH_3 in the photon energy range 30-90 eV
C. Cauletti, M. N. Piancastelli (Rome, Italy) and M.-Y. Adam (Orsay, France) 135

Single photon multiionisation of carbon monoxide using synchroton radiation
P. Lablanquie (Orsay, France), J. Delwiche, M.-J. Franskin-Hubin (Liege, Belgium), I. Nenner (Gif-sur-Yvette, France), J. H. D. Eland (Oxford, Gt. Britain) and K. Ito (Ibaraki-ken, Japan) 141

Differential FTIR spectroscopy with polarized radiation
B. Jordanov (Sofia, Bulgaria), E. H. Korte (Dortmund, F.R.G.) and B. Schrader (Essen, F.R.G.) 147

Resonance Raman and electronic absorption spectroscopy of bilirubin in solution. An experimental and theoretical study
L. Margulies and M. Toporowicz (Rehovot, Israel) 153

Fast determination of the quantitative secondary structure of proteins by using some parameters of the Raman amide I band
A. J. P. Alix, G. Pedanou and M. Berjot (Reims, France) 159

The rapid differentiation and identification of pathogenic bacteria using Fourier transform infrared spectroscopic and multivariate statistical analysis
D. Naumann, V. Fijala, H. Labischinski and P. Giesbrecht (Berlin, Germany) 165

A photoelectron spectroscopic study of molecular chlorine and bromine using three-photon resonant multiphoton ionisation
B. G. Koenders, D. M. Wieringa, K. E. Drabe and C. A. de Lange (Amsterdam, The Netherlands) 171

Hyperconjugative interactions in benzyls studied by means of ionization energy and electron affinity measurements
G. Distefano (Ferrara, Italy), A. Modelli, M. Guerra, D. Jones and S. Rossini (Bologna, Italy) 177

Torsional transitions and barriers to internal rotation of some molecules with CF_3 rotors
J. R. Durig, R. A. Larsen (Columbia, SC, U.S.A.), G. A. Guirgis and A. R. Fanning (Charleston, SC, U.S.A.) 183

Resonance Raman studies in the organic conductors α- and β- (PEDT--TTF)$_3$I$_3$ and β-(DMPEDT-TTF)$_3$I$_3$
J. S. Zambounis, E. I. Kamitsos, G. C. Papavassiliou and A. Terzis (Athens, Greece) 189

Molecular aggregation of ionic surfactants in formamide studied by laser Raman spectroscopy
A. M. Amorim da Costa (Coimbra, Portugal) 195

Effect of ionic potentials of metals on perturbation of the aromatic system of benzoic acid
W. Lewandowski and A. Janowski (Warsaw, Poland) 201

The IR and Raman spectra and conformations of cyclohexyl azide
D. Sülzle, A. Gatial, A. Karlsson, P. Klaeboe and C. J. Nielsen (Oslo, Norway) 207

Vibrational spectra and conformations of 1-chloro-4-fluorobut-2-yne
A. Karlsson, P. Klaeboe and C. J. Nielsen (Oslo, Norway) 215

Spectroscopic study of some condensed piperidine bicyclanols
E. Galvez, M. S. Arias, I. Ardid, J. Bellanato and J.V. Garcia-Ramos (Madrid, Spain) 223

Clathrate and inclusion compounds. Part 10. Solid state ^{13}C NMR studies of inclusion compounds
J. E. D. Davies and V. A. Knott (Lancaster, Gt. Britain) 229

Experimental studies on the UV-spectra of substituted pyridine N-oxides and their perchlorates in acetonitrile
A. Wawrzyńow, K. Sokolowski, L. Chmurzyński and A. Liwo (Gdansk, Poland) 235

General dynamics of four-level systems including relaxation
K. Lendi (Zurich, Switzerland) 241

Correlation of ultraviolet absorption frequences of phenyl substituted 2-phenyl-α , β-unsaturated carboxylic acids with Hammett substituent constants
V. V. Krstić, G. S. Ušćumlić and M. D. Muškatirović (Beograd, Yugoslavia) 247

Correlation of ultraviolet absorption frequences of cis and trans substituted cinnamic acids with Hammett substituent constants
G. S. Uščumlić, V. V. Krstić and M. D. Muškatirović (Beograd, Yugoslavia) 251

Synthesis and spectroscopic study of some new rigid N-bicyclo substituted 2-phenylacetamides
D. G. Antonović, S. D. Petrović (Belgrade, Yugoslavia) and A. D. Nikolić (Novi Sad, Yugoslavia) 255

Vibrational spectra and conformations of 1,3-dibromo-2,2-dimethyl-propane (DBDMP) and 2,2-di(fluoromethyl)-1,3-difluoropropane (TFN)
A. Gatial, M. Horn, P. Klaeboe, C. J. Nielsen and D. L. Powell (Oslo, Norway) 259

SCF-MO Calculations and NMR measurements for alkenylphosphonates
Y. G. Smeyers, A. Hernandez-Laguna, M. Fernandez-Ibañez, C. I. Sainz-Diaz, E. Galvez-Ruano and M. S. Arias-Perez (Madrid, Spain) 267

Synthesis and structural study of 9-(2'-hydroxyethyl)-9-azabicyclo[3.3.1]-nonan-3α-ol
I. Iriepa, A. Lorente, M. S. Arias, E. Galvez, F. Florencio, J. Sanz-Aparicio (Madrid, Spain) 273

^{1}H NMR Spectra of some 5-substituted-3-isopropyl-6-methyl uracils
B. Z. Jovanović, Z. D. Tadić, M. D. Muskatirović, M. B. Pešić and S. I. Bogdanović (Belgrade, Yugoslavia) 281

The microwave spectrum of 3-chlorothiophene
W. Caminati, B. Velino (Bologna, Italy), F. Caccinelli, R. S. Cataliotti, S. M. Murgia, G. Paliani and A. Santucci (Perugia, Italy) 285

Vibrational-rotational analysis of some of the fundamentals of vinyl-silane
J. K. McDonald (Redstone Arsenal, AL, U.S.A.), V. F. Kalasinsky, J. A. S. Smith (MS, U.S.A.), T. J. Geyer and J. R. Durig (Columbia, SC, U.S.A.) 291

Conformational analysis of MBBA fluorinated analogues by ^{1}H and ^{13}C - NMR
N. S. Pivovarova, I. E. Boldeskul, S. V. Shelyagenko and Yu.A. Fialkov (Kiev, U.S.S.R.) 297

The effects of structure and intermolecular hydrogen bonding on molecular reorientation times of the series of amines and hydrazines
V. F. Galat and E. V. Titov (Donetsk, U.S.S.R.) 303

Structure and hindered internal rotation in acylonium salts
E. V. Titov, V. I. Rybachenko, V. F. Galat, C.Ju. Chotiy and Yu. N. Alaev (Donetsk, U.S.S.R.) 309

Configurations in unsymmetrically N-methyl-N-cycloalkyl substituted 2-phenylacetamides
S. D. Petrović, N. D. Stojanović, D. G. Antonović (Belgrade, Yugoslavia) and A. D. Nikolić (Novi Sad, Yugoslavia) 315

Torsional transitions in the conventional Raman spectrum of ethanes
J. M. Fernandez-Sanchez, A. G. Valdenebro, S. Montero and W. F. Murphy (Madrid, Spain) 319

Infrared spectra and structure of $[(\eta\text{-}C_5H_5)Fe(CO)_2]_2$ adsorbed on oxide surfaces
S. Dobos (Budapest, Hungary), S. Nunziante-Cesaro (Rome, Italy) and B. V. Lokshin (Moscow, U.S.S.R.) 325

FTIR Study of interaction of $Re_2(CO)_{10}$ with silica and alumina supports
S. Dobos, A. Beck and L. Guczi (Budapest, Hungary) 331

Quantum chemical assessment of the structure of an oxygen radical adsorbed on titania and detected by ESR spectroscopy
J. C. Conesa, M. T. Sainz and J. Soria (Madrid, Spain) 337

FT-IR Characterization of adsorption complexes on magnesium oxide surfaces
R. Echterhoff and E. Knözinger (Siegen, F.R.G.) 343

SER Spectra of diazines adsorbed on silver sols: spectroscopic evidence of reduction products
M. Muniz-Miranda, G. Sbrana (Firenze, Italy) and N. Neto (Potenza, Italy) 351

Infrared studies on the interaction of N_2O adsorbed in transition metal ion-exchanged zeolites A
H. Förster and M. Remmert (Hamburg, F.R.G.) 357

SERS Study of the pyrrole polymerization
F. Martin, A. C. Prieto, J. A. de Saja (Valladolid, Spain) and R. Aroca (Windsor, Ont., Canada) 363

FT-IR Characterization of Si-H bonds on the surface of silicon carbide
P. Quintard, G. Ramis (Limoges, France), M. Cauchetier (Gif-sur-Yvette, France), G. Busca and V. Lorenzelli (Genova, Italy) 369

Interpretation of vibrational spectra of pristine, doped and photoinduced polyacetylene
C. Castiglioni, G. Zerbi (Milano, Italy), J. T. L. Navarrete (Milano, Italy and Malaga, Spain) and M. Gussoni (Genova, Italy) 375

Energy and electron transfer processes of adsorbed polymethine dyes
D. Fassler, M. Baezold and D. Baezold (Jena, G.D.R.)..... 383

Quantitative evaluation of reflectance spectra of light-scattering media
D. Fassler, R. Gade and U. Kaden (Jena, G.D.R.) 389

FTIR Study of benzene chemisorption on Pt/SiO_2
T. Szilagyi (Budapest, Hungary) 395

Vibrational and electronic spectra of the $PV_{14}O_{42}^{9-}$ polyanion
E. J. Baran and C. I. Cabello (La Plata, Argentina) 401

The low frequency vibrational spectra of some dichlorocyclopentylphenyl tertiary phosphine complexes of palladium(II) and platinum(II)
Che Xun, Song Guonan and Li Tongxin (Dalian, P.R. China) 407

Absorption of some tartaric acid salts and their aqueous solutions
M. Koralewski and M. Szafranski (Poznan, Poland) 411

Comparison of the effect of lanthanides (Ln), d-transition metals and selected metals of the main groups on the aromatic system of salicylic and benzoic acids
W. Lewandowski and H. Barańska (Warsaw, Poland) 417

Tuning of the trans-influence in sulfito-complexes of platinum(II)
D. K. Breitinger and M. Vogt (Erlangen, F.R.G.) 423

Spectroscopic studies and crystal field investigations on a complex neodymium(III) azide
K. Gatterer, H. P. Fritzer, G. Sperka (Graz, Austria) and P. Day (Oxford, Gt. Britain) 429

An infrared and Raman spectroscopic study of transition metal(II) halide quinoline complexes
S. Yurdakul (Ankara, Turkey), S. Akyüz (Samsum, Turkey) and J. E. D. Davies (Lancaster, Gt. Britain) 435

Absorption and luminescence spectra of U^{3+} in Cs_2NaYCl_6
Z. Mazurak, J. Hanuza and J. Drozdzynski (Wroclaw, Poland) 443

Vibrational spectra, phase transitions and force-fields in crystalline scandium hexafluorides
S. Turrell, S. Hafsi, P. Conflant, P. Barbier, M. Drache (Villeneuve, France) and J.-C. Champarnaud-Mesjard (Limoges, France) 449

Raman and FTIR investigations of metallic and semiconducting hexaborides
S. Turrell, Z. Yahia, G. Turrell (Villeneuve, France), J. P. Huvenne and B. Lacroix (Lille, France) 455

Multinuclear NMR study of vanadium(V) complexation with tartaric and citric acids
M. Madalena Caldeira, V. M. S. Gil (Coimbra, Portugal), M. L. Ramos and A. M. Cavaleiro (Aveiro, Portugal) 461

Bonding of the carbonyl group in metal saccharinates: correlation with the infrared spectra
G. Jovanovski and B. Šoptrajanov (Skopje, Yugoslavia) 467

Spectroscopic properties of lanthanide perchlorates in nonaqueous solutions
J. Legendziewicz, B. Jeżowska-Trzebiatowska, W. Stręk (Wroclaw, Poland) and H. Maghrawy (Cairo, Egypt) 473

Author index 477

Subject index 480